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## From Man vs. Nature to Environment vs. Budget - The Shifting Battles in the History of Pollution and Toxicity in Hamilton Harbour

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# From Man vs. Nature to Environment vs. Budget - The Shifting Battles in the History of Pollution and Toxicity in Hamilton Harbour

## **Cover Page Footnote**

Thank you to Dr. J. Bonnell for her continued support and guidance regarding this paper.

# FROM MAN VS. NATURE TO ENVIRONMENT VS. BUDGET: THE SHIFTING BATTLES IN THE HISTORY OF POLLUTION AND TOXICITY IN HAMILTON HARBOUR

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## ABSTRACT

Hamilton Harbour is the principle port serving South Western Ontario and the Niagara Peninsula region with two of Canada's largest steel manufacturers occupying the waterfront. As early as the 1860s fishery inspectors in Hamilton noted that fish tasted of coal, and that there were dead ducks and small animals that were coated in oil from refineries. In the 1950s the Hamilton Harbour was deemed unfit for recreational use and, even today, has yet to be delisted from the International Joint Commission's Area of Concerns designations list. Giglia's article seeks to add to the growing scholarship on the environmental history of Ontario. She analyzes historical sources of pollution and shows how they have affected Hamilton Harbor's ecology. Furthermore, Giglia weighs the efforts and effectiveness of specific groups in their attempt to delist the Hamilton Harbour from the Area of Concerns designation list.

Keywords: Environmental history, pollution, toxicity, Great Lakes, Hamilton Harbour, industrialization, public health

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**H**amilton Harbour is the principle port serving South Western Ontario as well as the Niagara Peninsula region with two of Canada's largest steel manufacturers occupying the waterfront. As early as the 1860s fishery inspectors in Hamilton noted the fish tasted of coal, and that there were dead ducks and small animals that were coated in oil from refineries.<sup>1</sup> In the 1950s the Hamilton Harbour was deemed unfit for recreational use and although the state of the harbour may be slowly improving, it is far from being delisted from the International Joint Commission's Area of Concerns (AOC) designations list. By 1965 there were 200,000 pounds of contaminant being dumped daily into the water of the Hamilton Harbour.<sup>2</sup> By the time Canada and the United States signed the Great Lakes Water Quality Agreement in 1972, researchers had determined that a total of 26 million kilograms of toxic chemicals were discharged into the Great Lakes each year.<sup>3</sup> In 1985 the International Joint Commission identified the Hamilton Harbour as one of the seventeen Canadian locations designated as an area of concern – defined as an area where environmental quality is degraded and beneficial uses of the water or flora are adversely affected.<sup>4</sup>

In this paper I want to first look at the history of the Great Lakes and the historical sources of pollution, and then specifically how this pertains to Hamilton Harbour. By looking at these histories and the various efforts aimed at delisting the Hamilton Harbour as an AOC, the extent to which these efforts have improved the Harbour as well as what that holds for its future will be evaluated. Even in 1992, following the opening of Hamilton's Bayfront Park and Waterfront Trail as carefully planned areas to encourage growth of plants and wildlife, the extent of restoration in the Harbour improved only moderately. As is evident in Dr. Nancy Bouchier's photograph (figure 1), and contrary to Ray DiGregorio's enthusiastic expressions more than twenty years ago the water still remains polluted. Hamiltonians are still unable to use the harbour for recreational activities like swimming and fishing and shifts in financial priorities

1. Laura MacDowel, *An Environmental History of Canada*, (Vancouver: UBC Press, 2002): 192.

2. The Ontario Water Resources Commission. 'Report on Industrial waste Loading Discharged to Hamilton Harbour by Bayfront Industries'. 1964.

3. Wayne Grady, *The Great Lakes: The Natural History of a Changing Region* (Vancouver: D&M Publishers INC, 2007): 783.

4. Hamilton Harbour Fact Sheet – 'Dialogue on Hamilton Harbour'. May 18, 1988.

and governmental responsibilities have delayed the cleanup yet again. Despite an increase in environmental awareness in Hamiltonians about both the quality of the water in the harbour and the health concerns of those living in industrial waterfront area, deadlines for action seem continually to come and go.



Figure 1. Nancy Bouchier, Photograph of Hamilton Harbour.

The water of the Great Lakes basin holds important significance within the history of Canada's development. The lakes were the avenues through which explorers and settlers penetrated the continent and extracted valuable resources that could be carried throughout.<sup>5</sup> The modern history of the Great Lakes region is one of intensifying use of the vast resource. It was not until the watershed was intensely settled and exploited that the abuses of the waters were learned.<sup>6</sup> Many studies conducted in the early half of the

5. "The Great Lakes: An Environmental Atlas and Resource Book." *U.S. Environmental Protection Agency*. Chapter 1 <http://www.epa.gov/greatlakes/atlas/glat-ch1.html>. 2012

6. *Ibid.*

twentieth century measure only naturally occurring minerals like calcium, carbon, iron and sodium. These studies failed to take into consideration the increase in dissolved minerals entering the Lakes due to agricultural, industrial and municipal wastes. The reality was that by the early 1950s the concentrations and kinds of compounds entering the Lakes were very different from what was historically recorded.<sup>7</sup> In spite of their large sizes, the Lakes remain sensitive to the effects of a wide variety of pollutants. These pollutants include runoff of soils and farm chemicals, city waste and discharge from industrial areas.<sup>8</sup> The water within the Great Lakes are vulnerable to this variety of direct pollutants which continue to remain in the system and become more concentrated with time.

Changing impacts on the environment can be traced over time. The first Europeans arriving had a modest impact through the killing of certain fur-bearing animals.<sup>9</sup> It was after waves of immigration, however, that settlements intensified and the Great Lakes drastically changed. Since European settlement, thirteen wildlife species have become extinct and the list of species that were once common in field naturalists' journals but that are now a rare sight, threatened or endangered continues to grow.<sup>10</sup> In addition, sawmills clogged streams with dust, ploughing washed soil away, and exploitive fishing resulted in the disappearance of entire fish populations.<sup>11</sup> In Beattie Bogue's *Fishing the Great Lakes: An Environmental History 1783-1933* it is demonstrated that by the time settlement spread to the shores of the Lakes in the seventeenth and eighteenth centuries, a comprehensive series of rules had been designed to preserve the fish and sustain yields.<sup>12</sup> Industrial wastes degraded one river after another, with growth in urbanization adding to the degradation.<sup>13</sup>

The 1997 research of McMaster University chemist Brian McCarry demonstrated that with regard to the harbour, "there seems

7. Grady, *The Great Lakes*, 648-649.

8. "The Great Lakes: An Environmental Atlas and Resource Book." U.S. Environmental Protections Agency. <http://www.epa.gov/greatlakes/atlas/glat-ch1.html>. 2012.

9. Ibid.

10. Grady, *The Great Lakes*, 34.

11. "The Great Lakes: An Environmental Atlas and Resource Book." *U.S. Environmental Protection Agency*. Chapter 1 <http://www.epa.gov/greatlakes/atlas/glat-ch1.html>. 2012

12. Margaret Beattie Bogue, *Fishing The Great Lakes: An Environmental History, 1783-1933* (Madison: University of Wisconsin Press, 2000), 14.

13. "The Great Lakes: An Environmental Atlas and Resource Book." *U.S. Environmental Protection Agency*. Chapter 1 <http://www.epa.gov/greatlakes/atlas/glat-ch1.html>. 2012

to be a relationship between levels of urbanization and the amount of stuff coming down the creek".<sup>14</sup> Industrialization and agriculture intensified after the turn of the twentieth century. New chemicals such as PCB's (polychlorinated biphenyls) in the 1920s and DDT in the 1940s (a combination of synthetic fertilizers) caused accelerated eutrophication – the process through which high amounts of phosphates and nitrates are accumulated and later concentrated in a body of water causing excessive algae growth.<sup>15</sup> Initiatives were undertaken in the 1970s towards reducing these discharges. Floating debris and oil slicks began to disappear demonstrating improvements could be made.

Nineteenth century settlers and their use of industry certainly had the best intentions for developing the land. Ashworth points out in his *The Late Great Lakes* that all of this settlement and development of the land was not thought at the time to be destructive. The intentions of these settlers were to create a permanent settlement rather than to senselessly destroy the land. This settlement ultimately required clearing land for fields and cities to be built and developed.<sup>16</sup> When the settlers began cutting down trees along the rivers they allowed more sunlight to warm the water and the temperature of the Lakes began to rise. With the growth of industrial cities that followed, water was taken out of the Lakes for industrial use and later returned at warmer temperatures.<sup>17</sup> This in combination with detergents containing phosphates as well as agricultural runoffs containing inorganic compounds resulted in an explosion of algal growth.<sup>18</sup> Two geographic features are responsible for water pollution problems within the Great Lakes region: the small size of the region's drainage systems and the deceptive size of the lakes that made them appear invulnerable.<sup>19</sup> The small streams of the Great Lakes do not have the power or means to move large amounts of city sewage.<sup>20</sup> Development of the land near the lakes meant pollution and direct altering of the environment. Cities filled wetlands, dredged sand bars and harbours

14. Mark McNeil, "Harbour like Settling Pond – It's a Catch Basin for Nasty Chemicals," *Hamilton Spectator*, November 28, 1997

15. "The Great Lakes: An Environmental Atlas and Resource Book." *U.S. Environmental Protection Agency*. Chapter 1 <http://www.epa.gov/greatlakes/atlas/glat-ch1.html>. 2012

16. William Ashworth, *The Late Great Lakes: An Environmental History*. (New York: Collins Publishers, 1986), 74.

17. Grady, *The Great Lakes*, 726.

18. *Ibid.*, 727

19. Ashworth, *The Late Great Lakes*, 58.

20. *Ibid.*

all on a massive and disruptive scale.<sup>21</sup> Cities needed harbours and the land adjacent to build things on. Nearly every coast in Canada and the United States had been dredged for long distances.<sup>22</sup> The lakes are still 'young and fragile', something that settlement has not taken into consideration and devastating environmental consequences have been the result.<sup>23</sup>

There is no denying the fact that if the number of toxic substances continues to accumulate within the Great Lakes ecosystem the risk to human health will increase. Protection of the lakes for future use requires a greater understanding of how past problems developed, as well as continued action to prevent further damage. The unexpected consequences of environmental changes have only recently become apparent. The Great Lakes became home to colonists, farmers, fishermen, miners, industrialists and entrepreneurs for many decades. It has only been recently, however, that there has been a wider and deeper understanding of the idea that the Lakes are 'homes' to more than just plants and animals.<sup>24</sup> Human-induced change was occurring at a dramatic rate and it was finally becoming noticed.

The 'ecosystem approach', which recognized that humans are part of the ecosystem and that human activity both affects the ecosystem and depends it, was formally recognized in the second Great Lakes Water Quality Agreement which was signed in 1978. By the time this agreement was revised, there were more than 350 contaminants and various heavy metals identified within the waters of the Great Lakes.<sup>25</sup> This agreement called for management plans to restore fishing and recreational uses to Hamilton's Harbour.<sup>26</sup> The agreement additionally called for virtual elimination of the discharge of persistent toxic chemicals and for Remedial Action Plans (RAPs) to be prepared for all areas of concern.<sup>27</sup> RAPs are unique in their emphasis on multi-disciplinary, multi-agency, multi-stakeholder partner-ships. By developing a locally based consensus on

21. Ibid., 59

22. Ibid., 60.

23. Ibid., 66.

24. Grady, *The Great Lakes*, 11.

25. Ibid., 811

26. "The Great Lakes: An Environmental Atlas and Resource Book." *U.S. Environmental Protection Agency*. Chapter 1 <http://www.epa.gov/greatlakes/atlas/glat-ch1.html>. 2012.

27. Ibid.



environmental problems, their causes and the key steps needed to solve them, RAPs provide a basis for action.<sup>28</sup> The Great Lakes are surrounded by two sovereign nations, a Canadian province, eight American states and thousands of governing bodies with jurisdiction for managing some aspect of the Great Lakes. Cooperation is essential.

Can we point fingers in this complex history of polluting the waters? John Riley in *The Once and Future Great Lakes Country – An Ecological History*. Riley looks at the history and potential future of the Great Lakes system. He argues that the freshwater system we have today is totally different and seemingly vacant of nature in comparison to when it was first taken over.<sup>29</sup> In addition, there is no single feature that can be held responsible for the decline in water quality and native species of fish in the lakes.<sup>30</sup> Riley traces warning signs back to 1857 and the plea made by the Upper Canadian fisheries superintendent to protect certain kinds of fish. Scientists by the 1960s were already noticing other changes. Some of the invasive organisms that have arrived in the Great Lakes region have caused a tremendous change in the makeup of the region's aquatic species'. So many invasive plant and animal species have moved into the Great Lakes region that Wayne Grady argues it seems like a 'man-made aquaculture system'; whereas in the period before settlement there were 150 native fish species in the Great Lakes, nearly half have declined or vanished and 162 new ones have taken over their habitat.<sup>31</sup> In addition, aquatic vegetation thinned, wild rice disappeared, and the insects that fish ate disappeared.<sup>32</sup>

It is frightening to think that there was even a zone within Lake Erie that was deemed an oxygen-depleted dead zone in the 1950s through the 1960s.<sup>33</sup> By the early 1960's concerns about eutrophication were making news headlines. In 1965, *Newsweek* called Lake Erie "the Dead Sea" and ironically declared despite the massive growth of algae that the Lake was dying.<sup>34</sup> A Great Lakes

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28. "The Great Lakes: An Environmental Atlas and Resource Book." *U.S. Environmental Protection Agency*. Chapter 4 <http://www.epa.gov/greatlakes/atlas/glat-ch1.html>. 2012.

29. John Riley, *The Once and Future Great Lakes Country – An Ecological History* (McGill-Queens University Press: 2013) 148.

30. Ibid.

31. Grady, *The Great Lakes*, 841-842.

32. Riley, *The Once and Future Great Lakes Country*, 150.

33. Ibid., 151.

34. Grady, *The Great Lakes*, 734-735.

Fishery Commission was established and put in place by 1955. Its major responsibilities were to develop research programs on the Great Lakes and make recommendations regarding increasing numbers in species where numbers are a concern - but problems remained. It was not until 2005 that laws called for the protection against the dumping of polluting substances in Canadian waters.<sup>35</sup> In addition, international agreements on water quality which were intended to stop pollution were not being enforced.<sup>36</sup> Local changes have been witnessed by everyone around the Great Lakes. This can be seen through four major surveys of the fish in Lake Ontario in which the populations of species changed radically every time.<sup>37</sup> With the absence of a shared desire and goal to clean up the Great Lakes what is the next step?

The history of Hamilton's harbour coincides with the trends seen in the history of the Great Lakes region. The decision by Hamilton's city council in the mid-1850s about where to get their city's water shaped the environmental development of the waterfront. Following a string of fires and a cholera outbreak in the 1850s, the city sought a water supply that was safer and reliable. A lead engineer convinced the city to build a waterworks system that took in water from Lake Ontario from a place three to four miles from the city's centre. This gave opportunity to city residents and factories alike to use the harbour as a sink for their wastes.<sup>38</sup> By placing sewer outlets farther to the east and reclaiming land from the inlets, civic leaders could encourage industrial development in the areas east. Their plan worked and many industrialists developed their factories along the waterfront's northeastern shore to gain direct access to ports and the railway.<sup>39</sup> Although the Fisheries Act of 1868 authorized a stop to industry action that hurt the fishery by dumping waste into the water, efforts to prosecute offenders found little support from the local business community, political leaders, or authorities.<sup>40</sup> Despite Kerr's fishery commission stopping fishing in "out" seasons as well as fishing on the Sabbath, the fish still disappeared and habitats would have to

35. Riley, *The Once and Future Great Lakes Country*, 149.

36. *Ibid.*, 151.

37. *Ibid.*, 153.

38. Cruikshank and Bouchier, "Blighted Areas and Obnoxious Industries: Constructing Environmental Inequality on an Industrial Waterfront, Hamilton, Ontario, 1890-1960," *Environmental History* 9, no. 3 (2004), 468.

39. *Ibid.*, 470-471.

40. *Ibid.*, 468-469.

be rebuilt in order for birds and fish to nest and feed.<sup>41</sup> Before 1900, the harbour was a thriving wetland and fishery, a lush natural environment, but in the twentieth century it became home to the largest concentration of heavy industry in Canada.<sup>42</sup> In the 1960's the changes caused by industry were beginning to be seen and described. Hamilton became known throughout North America and the United States as a pollution hotspot and residents became ashamed of the look and smell of the harbour.<sup>43</sup> A writer in the *Hamilton Spectator* noted that from a distance the waters of the bay look attractive and inviting but from nearby it was plain foul.<sup>44</sup> The mid-1970s and 1980s brought the beginning of aid through federal and provincial regulations which brought about a reduction in pollutants from the industrial sector and in 1992 the RAP was finalized. But despite all of this, by the end of 1997 little progress, if any at all had been achieved at Randle Reef.<sup>45</sup>

*A Historical Profile of Hamilton and its Harbour* traces the history of the present problems regarding Hamilton Harbour. Primarily, the structure of the laws put in place to regulate the use of the harbour placed priority on shipping over waste disposal and governments did not see it fit to alter these priorities until recently.<sup>46</sup> It seems as if the government did not take into consideration that the location of the harbour within an urban and industrialized watershed created responsibilities the harbour could not bear.<sup>47</sup> Within the last 150 years especially, the physical structure of the harbour has undergone significant human-induced changes. *Hamilton Spectator* reporter Mark McNeill argues that human history has developed at the expense of natural history and that the natural areas that exist do so as "tiny and degraded fractions" of what was present before.<sup>48</sup>

These changes include the construction of the Desjardins

41. *People and the Bay*. Directed by Cruikshank and Bouchier. Hamilton, ON, 2008. DVD.

42. Louise Knox, "Decline and Restoration: Restoration of Hamilton Harbour." In *Voices for the Watershed - Environmental Issues in the Great Lakes-St. Lawrence Drainage Basin*. Edited by Gregor Beck and Bruce Littelljohn, 129-136. McGill-Queen's University Press: 2000, 130.

43. *Ibid.*, 130.

44. Cruikshank and Bouchier, "Blighted Areas and Obnoxious Industries," 483.

45. Knox, "Decline and Restoration: Restoration of Hamilton Harbour," In *Voices for the Watershed - Environmental Issues in the Great Lakes-St. Lawrence Drainage Basin*. Edited by Gregor Beck and Bruce Littelljohn, 129-136. McGill-Queen's University Press: 2000, 130-131.

46. Mark Sproule-Jones. *A Historical Profile of Hamilton and its Harbour - Issue 3*. Copps Chair in Urban Studies: McMaster University, September 1986, 3-4.

47. *Ibid.*, 4.

48. Mark McNeil, "A Paradise Lost-Hamilton's Nature Radically Altered in 150 years" *Hamilton Spectator*, Dec 28, 1996.

Canal through Cootes Paradise and the Burlington Canal to secure shipping access to Lake Ontario.<sup>49</sup> In addition to these changes was the filling in of 1/3 of the harbour for the purposes of industrial expansion.<sup>50</sup> The Harbour has been altered to the point of no repair by infilling, disposing of wastes, and using it as a food source for various species of fish as well as water to be used in city homes and for sewage. This image is dramatically different than Simcoe's work. Given all of these changes within the last 150 years, the Hamilton Advisory Committee outlined the seven key issues for the Hamilton Harbour in 1982. Two of these issues include: water quality which remains unsatisfactory and thus prevents the water from being able to 'self-clean', as well as public access to the harbour (with there only being a limited 7% available space for recreation).<sup>51</sup> In the 1988 RAP summary document were additional specific goals that relate to water quality. These goals included increasing recreational boating and water sports, shipping and navigation as well as swimming.<sup>52</sup>

It is clear that the Great Lakes region, and more specifically the Hamilton Harbour, has a long history of identifiable sources of pollution and environmental degradation. It is also clear that the Great Lakes Water Quality Agreement as well as the various Remedial Action Plans were designed to help restore previous quality to the Harbour. Noting this, some questions should be asked: To what extent has the state of the Hamilton Harbour been improved or restored? And maybe more importantly after such a legacy and history of pollution, what would a cleaner harbour mean for Hamiltonian and their city? Restoration work erases certain features of a blighted area's past. Hamilton's Bayfront Park is a case in point. It opened in 1993 as a very consciously-crafted parkland artificial in origin, but designed to be a natural waterfront space.<sup>53</sup> Planners left no traces of the park's past as a dump and instead people can now walk, jog and bike the trails all seemingly unaware that the whole Park stands upon

49. Mark Sproule-Jones, *A Historical Profile of Hamilton and its Harbour – Issue 3*. Copps Chair in Urban Studies: McMaster University, September 1986

50. Mark McNeil, "A Paradise Lost-Hamilton's Nature Radically Altered in 150 years," *Hamilton Spectator*, Dec 28, 1996.

51. Hamilton Harbour Advisory Committee. "Hamilton Harbour: A Heritage and an Opportunity: The Report of the Hamilton Advisory Committee". Hamilton, Ont: Hamilton Harbour Advisory Committee, February 1982.

52. Hamilton Harbour Remedial Action Plan. 'A Summary Report of the Goals, Problems, and Options for the Hamilton Harbour Remedial Action Plan'. Ontario Ministry of Environment. 1988

53. Cruikshank and Bouchier, "Remembering the Struggle for the Environment: Hamilton's Lax Lands/ Bayfront Park, 1950s-2008," *Left History* 13.1 (Spring/Summer 2008), 118.

what was infilled into the harbour to make ‘land’. Hamilton’s Waterfront Trail is another carefully and consciously planned area with its shoreline designed by biologists to encourage the growth of self-sustaining fish and wildlife and have native plants lining its way.<sup>54</sup> But in response, a lengthy Hamilton Harbour Study of 1998 argued that the toxic chemicals that sit at the bottom of the harbour remain as much an issue now as a decade ago and that in some case, after years of decline, water pollution levels have increased – “virtually no progress has been made.”<sup>55</sup>

What has stopped the Hamilton Harbour from meeting its goal of delisting as an AOC? John Hall, co-ordinator of the harbour’s remedial action plan, said delays in upgrades to the city’s Woodward Avenue sewage treatment plant and the capping of the notorious toxic coal tar blob at Randle Reef have pushed the target date back by five years.<sup>56</sup> Despite claims in 2006 by the RAP and Canada Centre for Inland Waters that “the goal of restoring environmental health and qualities to Hamilton Harbour Great Lakes Area of Concern ...is considered to be achievable by the year 2015”, the *Hamilton Spectator* bleakly stated in 2012 that “Hamilton Harbour won’t meet a long-standing goal of being delisted as a Great Lakes area of concern by 2015”.<sup>57</sup> In 1996 the *Hamilton Spectator* posed the question, “want to swim and fish again in the Hamilton Bay?” The answer, despite what Hamiltonians wanted to hear was expensive: “the [roughly guessed] price tag is \$600 per person every year.”<sup>58</sup> In this sense, financial obstacles remain a problem to the restoration of the Hamilton Harbour.

There are several predictions that are still being made about the goals and future of the Harbour waters. Formally delisting the harbour will require three years of monitoring to satisfy the International Joint Commission on the Great Lakes plan that the projects and overall remedial action are achieving expected results.<sup>59</sup> Chris McLaughlin, executive director of the Bay Area Restoration Council, said even if the Randle Reef and sewage plant projects meet

54. Ibid., 120.

55. Rick Hughes. ‘Harbour Cleanup Lagging’ *Hamilton Spectator*, September 18, 1998.

56. “Hamilton Harbour to Miss Cleanup Goal.” *The Hamilton Spectator* (Hamilton, ON), April. 19, 2012.

57. Ibid.

58. ‘City Bay Clean-up to Cost \$600 each’ *Hamilton Spectator*, November 25, 1966

59. “Hamilton Harbour to Miss Cleanup Goal.” *The Hamilton Spectator* (Hamilton, ON), April. 19, 2012.

the 2020 target, the harbour still won't qualify as being officially clean – “We're hoping to have the cleanup portion done by 2020 and then it'll take a few years of capping,” Hall said. “We'll probably not see construction start till 2014 or 2015 and then that'll push out the completion to 2022 or 2023...”<sup>60</sup> Overall the Vision 2020 (Hamilton's sustainable future goal) reflects a change and maturation in outlooks towards the ecosystems; their reforms require compromise between environmental, social and economic concerns.<sup>61</sup> An example of this change in outlook can be seen through the 1969 Hamilton opposition to apartment building plans for the waterfront. Hamiltonians were warned about exactly what infilling was doing to the water. What used to be the solution was now viewed as the problem.<sup>62</sup> There was a continued insistence that the harbour belonged to all and thus people were key to making the changes happen.

Hamiltonians as a people remain the key to making changes happen. Many of the older generation of Hamiltonians within the city may remember the times of being able to enjoy the recreational and fishing waters of the harbour. But the reality remains that the majority of youth and young adults will have grown up in the city without knowing where/where Hamilton harbour is because its polluted waters have prevented them from spending in or around its waters. I myself have up grown up in Hamilton both knowing where the harbour is and making jokes at the possible maladies and deformities that could result from going past the no swimming warning signs for a quick dip in the water. More than twenty years ago, Ray DiGregorio enthusiastically expressed that “within ten years...the public will be able to use the harbour for recreational activities...they'll have swimming there and they'll know that they can fish out of the harbour with little concern”.<sup>63</sup> Mark McNeil pointed out that it has taken more than two decades of scientific research, changes in plans, shifts in priorities and responsibilities and escalating price estimates, but the first phase of \$138.9-million remediation project is set to begin later this year on the section of Hamilton Harbour known as Randal Reef – but this year is almost

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60. Ibid.

61. Farrell Boyce. 'Defining Quality of Life in the Bay Area' *Hamilton Spectator*, November 12, 1996.

62. *People and the Bay*. Directed by Cruikshank and Bouchier. Hamilton, ON, 2008. DVD.

63. Ray DiGregorio. 'Hope for the good, bad and smelly' *Hamilton Spectator*, June 4 1992.

over.<sup>64</sup> The Randle Reef project, in relation to the overall plan to rehabilitate the Hamilton Harbour will mean that the hopefully soon-to-be healthier area of Randle Reef will no longer spread pollutants through water currents to other places within the harbour. This would be achieved through the building of a steel containment structure that will cover the area. The seven hectare double walled structure would cover the area with the highest levels of environmental degradation and pollution and is so large that it can contain enough coal tar sediment to fill Hamilton's 19,000 person capacity FirstOntario Center – not once or even twice, but three times.<sup>65</sup> Cleaning up the worst coal tar-contaminated site in Canada would ultimately bring the harbour closer to the dream of being delisted as an AOC by the International Joint Commission, a scarlet letter it has borne since 1987. Months after announcing the project for Randle Reef it was announced that all bids on cleanup come in over budget – financial concerns are once again postponing additional cleanup measures for the Harbour.<sup>66</sup> More recently, the plan to clean up the blob at Randle Reef will have to be scaled down, and made cheaper.<sup>67</sup> Currently, environment Canada is looking for a contractor that is willing to take on a less ambitious plan after last year's plan fell awfully short – “Rather than dredging less harmful sections of the reef and putting the material in the containment facility, less severely polluted sediments will be left along and covered with some kind of barrier.”<sup>68</sup> Last June all bids come in over budget and no contract was awarded – government officials will have to try again.

Problematically, steel companies in Hamilton had a legacy of pollution, and spills continue right up to the present day. Ministry of Environment figures demonstrate that the steel-making plant reported over 150 spills to land or water over the past decade, with four being recorded this year and environmental land and water penalties totalling \$33, 910 were assessed.<sup>69</sup> Ultimately, there is still much work to be done in terms of the restoration and rehabilitation of Hamilton Harbour. Many deadlines have already come and gone

64. “Capturing the Blob at Randle Reef” *Hamilton Spectator*, February 26, 2014.

65. Ibid.

66. “Bay Cleanup Group not Panicking Over Stalled Randle Reef Project: All bids on construction cleanup come in over budget” *Hamilton Spectator*, June 18, 2014.

67. Mark McNeil, “Cheaper-Scaled-down Plan to Cleanup Harbour Blob – With budget of about \$140 million, Ottawa ready to tenure again on containment project” *Hamilton Spectator*, February 14, 2015.

68. Ibid.,

69. ‘Present-day spills add to legacy of U.S. Steel pollution in Hamilton’ *Metro News*, October 8, 2014.



in the past and this has negative effects on how Hamiltonians are likely to view future deadlines. In regards to the waters of the Great Lakes, the International Joint Commission continues to monitor quality. There has been an increase in environmental awareness in recent decades and improvements to water quality and habitats have been made. In addition to spills by industry, the effects of the almost 100,000 tonnes of salt that will stay in the environment and ultimately end up in Hamilton's Harbour.<sup>70</sup> The city of Hamilton is working to lay down sand in more areas as it is meant to be in our soil and as well as at the bottom of waterways.

While the waters in Hamilton's Harbour are still murky, it should be noted that improvements have in fact been made. In 2013, after decades of pollution and contamination, strides have been made towards moving Hamilton Harbour from the list of polluted hot spots. The Bay Area Restoration Council's 2002 'report card' for the harbour demonstrates some of these improvements. Water quality factors have shown a remarkable improvement but there are several key factors that do not meet RAP targets.<sup>71</sup> Tanks were built to prevent raw sewage overflows from entering the water but nuisance plant growth continues to be a problem.<sup>72</sup> In regards to fish and wildlife, activists have created almost 400 hectares of new habitat and 170 acres of aquatic vegetation were re-established within the harbour. There have been observable improvements in fish populations and diversity within these restoration sites but unfortunately not within the harbor itself.<sup>73</sup> Proposed solutions to for further improvements in the future include: reductions in pesticide use on private lands, accurate data to record spills, restricted fishing zones, increased public awareness about the current situation of the water and wildlife. Not surprisingly, sufficient, reliable and considerable funding will be needed. Alongside the plans for the Randle Reef containment structure there are current projects underway to make upgrades to the Woodward Wastewater Treatment Plant (WWTP) to further improve water quality.

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70. Kathryn Gold, "Let's sand, not salt our city streets – Come spring, 90,000 tonnes of road salt will end up in Hamilton Harbour" *Hamilton Spectator*, March 1, 2014.

71. "Toward Safe Harbours" *Hamilton Spectator*, November 30, 2002.

72. Ibid.

73. Ibid.



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